marble and biotite - hornstone. At greater distance from the intrusion the hornstone facies is gradually replaced by the tremolite - epidote - muscovite facies formed at lower temperatures. The fracturing and crushing of the roof has played a decisive roll in the production of skarn, the pyroxene - scapolite rocks and the greisen. According to Ye.N. Smolyanskiy, and P. I. Naletov, the geologists who have worked in the area, the faulting originated during the Caledonian tectonic-magmatic cycle. During the Jurassic new dislocations of the earth's crust took place; these in turn belong to the Kimmeridgian tectonic-magmatic cycle. At this time leucocratic granites intruded along the rejuvinated faults of Caledonian origin. The emplacement of the intrusions further fractured the original shear zone and shattered the surrounding rocks. These fractures served as channels for the introduction and circulation of post-magmatic solutions which transformed the country rock into a contact-infiltration rock (Ref 4). Thus in the first stage of post-magmatic alteration, the pyroxene- scapolite rocks were formed out of marble produced by the thermal metamorphism. At the same time the granite was transformed into

SHMOTOV, A.P.

Scapolization of limestones in contact with the Cimmerian granite in the Dzhida ore region. Zap.Vost.-Sib.otd.Vses.min. ob-va no.1:123-128 '59. (MIRA 14:7)

1. Institute geologii Vostochno-Sibirskogo filiala AN SSSR. (Dzhida Valley--Limestone) (Dzhida Valley--Scapolite)

SHMOTOV, A.P.

Columnar-type skarn bodies in the Dzhida ore-bearing region. Trudy BKNII no.2:104-108 '60. (MIRA 14:10)
(Dzhida District--Ore deposits)

SHMOTOV, A.P.

Contact metamorphism of Cimmerian intrusions in the Dzhida region.
Trudy BKNII no.7:71-85 '61. (MIRA 16:4)
(Dzhida Valley--Metamorphism (Geology))

BALAKINA, L.M.; BULMASOV, A.P.; DUVZHIR, G.; YESKIN, A.S.; KURUSHIN, R.A.; LOGACHEV, N.A.; LUK'YANOV, A.V.; NATSAG-YUM, L.; SOLONENKO, V.P., prof.; TRESKOV, A.A.; FLORENSOV, N.A.; KHIL'KO, S.D.; SHMOTOV, A.P.; ARSEN'YEV, A.A., red.izd-va; DOROKHINA, I.N., tekhn. red.

[Gobi Altai earthquake] Gobi-Altaiskoe zemletriasenie. Moskva, Izd-vo Akad. nauk SSSR, 1963. 390 p. (MIRA 16:5)

1. Akademiya nauk SSSR. Sibirskoye otdeleniye. Vostochno-Sibirskiy geologicheskiy institut. 2. Chlen-korrespondent Akademii nauk SSSR (for Florensov).
(Gobi Altai--Earthquakes)

GLOBA, V.A.; GORDIYENKO, I.V.; SHMOTOV, A.P.

Hydrothermal manifestations in the Jurassic sediments of the Eastern Sayan Mountains. Geol. i geofiz. no.12:127-134 '64. (MIRA 18:6)

1. Institut zemnoy kory Sibirskogo otdeleniya AN SSSR, Irkutsk.

SHMOTOV, A.P.; GORDIYENKO, I.V.; GLOBA, V.A.

Some characteristics of metamorphism in the boundaries of the Okinskiy deep fault (Eastern Sayan Mountains). Izv. AN SSSR. Ser. geol. 29 no.11:98-101 N '64. (MIRA 17:12)

1. Institut zemnoy kory Sibirskogo otdeleniya AN SSSR, Irkutsk.

SHMOTOV, A.P.; GORDIYENKO, I.V.; GLOBA, V.A.

Some characteristics of metamorphism in the boundaries of the Okinskiy deep fault (Eastern Sayan Mountains). Izv. AN SSSR. Ser. geol. 29 no.11:98-101 N '64. (MIRA 17:12)

1. Institut zemnoy kory Sibirskogo otdeleniya AN SSSR, Irkutsk.

SHMOTOVA, N.G.

Use of vitreous body preparation in gynecology. Sovet. med. 16 no. 7:35-36 July 1952. (CLML 22:4)

1. Of the 22nd Polyclinic (Head Physician -- V. S. Levin), Timiryazevskiy Rayon, Moscow.

SHMOVANOV, S.

USSR/Petroleum - Fuel Resources Efficiency, Industrial Aug 49

"Measures on Fuel Economy Taken by Petroleum Refineries," M. N. Granovskaya, S. Shmovanov, $3\frac{1}{2}$ pp

"Energet Byul" No 8

Subject measures can be divided into two basic groups: (1) for increasing efficiency of equipment, and (2) for using secondary energy resources. Gives figures showing advantages of each method.

PA 2/50T100

8(0) SOV/112-59-2-2317

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 2, p 5 (USSR)

AUTHOR: Shmoylov, N. F.

TITLE: Analytical Investigation of a Nonlinear-Capacitor Discharge (Analiticheskoye issledovaniye razryada nelineynogo kondensatora)

PERIODICAL: Izv. vyssh. uchebn. zavedeniy. Elektromekhanika, 1958, Nr. 1, pp 61-70

ABSTRACT: An analytical calculation of the discharge of a nonlinear capacitor through a resistor is offered. Variation laws of discharge and voltage with time are discovered. The results obtained serve to determine static and dynamic capacitances of the capacitor. A comparison with linear capacitors is made, and possible simplifications (on the basis of introduced errors) are evaluated. The solution is presented in the form of the sum of a number of exponentials whose initial values and time constants are analyzed.

V. Ye. B.

Card 1/1

Nikolay Fedorovich

SOV/144-58-10-4/17

AUTHOR: Shmoylov, N.F., Assistant

TITLE: Nonlinear Properties of a Barium Titanate Single Crystal in a Sinusoidal Field (Nelineynyye svoystva monokristalla titanata bariya v sinusoidal'nom pole)

PERIODICAL: Izvestiya Vysshikh Uchebnykh Zavedeniy, Elektromekhanika, 1958, Nr 10, pp 36-44 (USSR)

ABSTRACT: The author discusses the normal polarisation curve of induction D against electric field E, which is constructed by joining the peaks of the hysterisis cycles (Fig 1). This curve is shown in the topmost graph of Fig 2. The author introduces a new criterion of nonlinearity, N. The value of N is given by

$$N = \int_0^{E_{max}} \left| \frac{d^2D}{dE^2} \right| dE = 2\varepsilon_\partial (E_1) - \left[\varepsilon_\partial(0) + \varepsilon_\partial(E_{max}) \right], \quad (1)$$

where ε_∂ is the differential permittivity given by $\partial D/\partial E$, E_1 is the field where ε_∂ has a maximum and E_{max} is the maximum field reached, shown by the region III in the topmost part of Fig 2. Dependence of ε_∂, $d\varepsilon_\partial/dE$ and

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Nonlinear Properties of a Barium Titanate Single Crystal in a Sinusoidal Field

N on the field E are all shown in Fig 2. Experiments carried out by the author followed the technique described by Sawyer and Tower (Ref 8). Barium titanate single crystals with 2% of lead, electrode area of 1 mm^2 and 0.05 mm thickness were used. A family of hysteresis loops obtained is shown in Fig 1 and the normal polarisation curve in Fig 3. The coordinate axes of Fig 3 represent the peak (amplitude) values of the field and induction. Measurements were made at 80 c/s and at room temperature. When strong fields were applied samples were found to evolve heat and their temperature rose. The regions I, II and III shown in Fig 2, were found to lie between 0 and 1; 1 and 30 and above 30 kV/cm. The author's finding of the absence of hysteresis below fields of 1 kV/cm was confirmed by optical studies of the domain structure reported by Little (Ref 9) and by studies of the Barkhausen effect reported by Kibbelwhite (Ref 10). The principal cause of polarisation in very weak fields (below 1 kV/cm) is

Nonlinear Properties of a Barium Titanate Single Crystal in a Sinusoidal Field

the elastic displacement of the domain boundaries (Fig 4) or reversible appearance of new domains. At fields above 1 kV/cm the proportionality between the induction and the field no longer holds. In a field of 6 kV/cm the maximum of the rate of rise of the induction with field is observed. This is shown by a maximum on the differential permittivity curve in Fig 5. Between 1 and 30 kV/cm hysteresis loops appear and the domain structure is altered considerably by the effect of the field. When the field amplitude exceeds 30 kV/cm a single-valued linear dependence of the induction on the field is again observed. Differentiating the normal polarisation curve with respect to the field, one obtains differential permittivity shown in Fig 5. The values of the differential permittivity ε_∂ are the same in very weak fields (region I) and on saturation (region III), being equal in each case to about 500. At 6 kV/cm the value of the differential permittivity passes through a maximum where $\varepsilon_\partial = 29000$. Fig 6 represents the second derivative of the induction with

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Nonlinear Properties of a Barium Titanate Single Crystal in a Sinusoidal Field

respect to the field. The curve of Fig 6 is equal to zero except in the region where hysteresis cycles occur. In a field corresponding to the maximum of ε_∂, i.e. the field denoted by E_1 in Eq (1), the value of the second derivative of induction with respect to the field, $\partial^2 D/\partial E^2$, becomes zero, passing from positive values at lower fields to negative values at higher fields. The integral of nonlinearity for a barium titanate single crystal is shown in Fig 7 as a function of the field E. This figure shows that the nonlinearity of the normal polarisation curve may be represented by a number equal to N. This nonlinearity in weak fields is about 27000; in strong fields it is 30500 and the total nonlinearity is 57500. The total nonlinearity is close to double the value of the maximum of the differential permittivity (2 x 29000). The nonlinearity exists only at fields at which hysteresis takes place. Changes in the form of the hysteresis cycles with increase of the field intensity are shown in Fig 8. The first

Nonlinear Properties of a Barium Titanate Single Crystal in a Sinusoidal Field

oscillogram refers to region I where the dependence between the induction and the field is linear. The last oscillogram, in the bottom right-hand corner of Fig 8, represents dependence of induction on the field at saturation. The first oscillogram in each row in Fig 8 corresponds to one of the points marked, a, b, v, g, d, in Fig 1, 3, 5, 6 and 7. Fig 9 shows the dependence of the coercive force E_k and the remanent induction D_{ocm} on the field. On analysing his experimental data the author came to the following conclusions. (1) The field at which a noticeable hysteresis is observed is 1.5 kV/cm. (2) The remanent induction and the coercive force increase linearly with the field up to about 3 kV/cm. (3) The rate of rise of the coercive force with the field is considerably larger than the rate of rise of the remanent induction. Nonlinearity at fields up to 3 kV/cm is small; N = 3000. (4) Between 3 kV/cm and 5 kV/cm both the coercive force and the remanent induction rise faster and their rates of rise are approximately equal (Fig 9).

Card 5/7 At 5 kV/cm, $d\varepsilon_\partial/dE$ has a positive maximum equal to

Nonlinear Properties of a Barium Titanate Single Crystal in a Sinusoidal Field

11000 cm/kV and the integral of nonlinearity reaches approximately half its final value (N = 20000). (5) Up to about 5 kV/cm the ratios of the coercive force to the maximum applied field and the remanent induction to the total induction, shown in Fig 10, are identical although their absolute values vary in different ways with the applied field. (6) The maximum value of the differential permittivity is 29000 at E = 6 kV/cm. The value of the integral of nonlinearity reaches 27000. The relative values of the remanent induction and the coercive force reach their maxima at 6 kV/cm and the hysteresis cycles become almost square in shape (row G in Fig 8). (7) At fields of 15 kV/cm the remanent induction reaches saturation but the coercive force still continues to rise slowly up to about 30 kV/cm. Between 15 and 30 kV/cm the value of the differential permittivity is small and the integral of nonlinearity practically reaches its maximum value. (8) Beyond 30 kV/cm the hysteresis is absent, the remanent induction and the coercive force are constant and the nonlinearity does not increase

Nonlinear Properties of a Barium Titanate Single Crystal in a Sinusoidal Field

any further. Acknowledgement is made to A.L.Khodakov for his advice. There are 10 figures and 11 references, 6 of which are Soviet, 4 English and 1 translated from English into Russian.

ASSOCIATION: Novocherkasskiy politekhnicheskiy institut, Kafedra avtomaticheskikh i izmeritel'nykh ustroystv (Novocherkassk Polytechnical Institute, Chair of Automatic and Measuring Apparatus)

SUBMITTED: 13th October 1958

Card 7/7

24(3)
AUTHOR: Shmoylov, N. F. SOV/48-22-12-5/33

TITLE: Aperiodic Influence on a Condenser With Piezoelectrics (Aperiodicheskoye vozdeystviye na kondensator s segnetoelektrikom)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1958, Vol 22, Nr 12, pp 1433 - 1435 (USSR)

ABSTRACT: The practical use of condensers with piezoelectrics unconditionally requires a theoretic investigation of the processes in circuits with non-linear capacity. Aperiodic processes of charging and discharging a non-linear condenser in various circuits and at different tensions must be specially investigated. On investigating the processes in a circuit having a single non-linear element and an active resistance the condition of equilibrium was taken down in the form of (1) $IR+U-U_o = 0$. (U - tension on the linear element, I - current in the circuit, U_o - source charge). A differential equation for charge and potential, integrated by separation of variables at constant source charge, appears at any approximation of the form $U = \varphi(q)$ and its reciprocal. Formally

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(2) can be explained in the form of

$$q = \frac{1}{\delta}\left[\frac{U}{\eta} - \frac{1}{2}\left(\frac{U}{\eta}\right)^2 + \ldots\right].$$

As to $\frac{U}{\eta} \ll 1$ one can restrict oneself to one linear term. In this case the formulae for a linear condenser are obtained from the preceding. The relations found allow an accurate investigation of the influence of any parameter on the processes in circuits with non-linear capacity. There are 3 Soviet references.

ASSOCIATION: Rostovskiy-na-Donu gos.universitet (Rostov-na-Donu State University) Novocherkasskiy politekhnicheskiy institut (Novocherkassk Polytechnic Institute)

SHMOYLOV, N. F., Candidate Phys-Math Sci (diss) -- "Investigation of the nonlinear properties of Seignette-electrics". Rostov na Donu, 1959. 10 pp (Min Higher Educ USSR, Rostov na Donu State U, Phys-Math Faculty), 150 copies (KL, No 24, 1959, 127)

Influence of the Exciting Field vs Time Characteristic on the Non-linear Properties of Siegnetto-electrics

to the way in which domains occur. It is concluded that the fine structure of the ceramic is degenerate compared with the single crystal. The structural influence is even more clearly seen in Figure 2, where incremental permittivity ε_g is plotted against field. Both this measure and the second derivative constitute a similar sequence with respect to material. Table 1 lists the following characteristic field values; E_{I-II}, the onset of hysteresis; E_1, maximum value of ε_g; E_2, maximum positive $d\varepsilon_g/dE$; E_3, maximum negative $d\varepsilon_g/dE$. Figure 3 shows the relative values of residual induction and coercive force for the ceramics and solid solutions. The introduction of impurity atoms leads to greater non-linearity at low field values not only because the domain structure is upset but also because the electromechanical properties are changed. This effect is strongest in the ceramic form. The non-linear

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Influence of the Exciting Field vs Time Characteristic on the Non-linear Properties of Siegnette-electrics

properties have been more closely studied by applying unipolar rectangular voltage pulses through a resistance to the sample. From part of the resistance a voltage is picked off, integrated and applied to the Y-plates of a cathode-ray tube. Figure 4 was taken with a series resistance of 100 kΩ. Second-derivative curves were also prepared and the non-linearity N calculated as in Ref 1 and entered in Table 1. In Figure 5 minor hysteresis loops are shown for various indicated points on the VK1 curve in Figure 4. Up to a field corresponding approximately to E_2 the loop is strictly symmetrical.

As the polarizing field increases the positive remanence increases and also the coercive force. Also shown in Figure 5 is a family of loops taken at gradually increasing pulse amplitudes. The presence of a steady component of excitation (with unipolar pulses) leads to a narrowing of the hysteresis loop and a reduction of non-linearity. Figure 6 compares the basic polarization curves and first derivatives of the ceramic for sine-wave and pulse. The

Influence of the Exciting Field vs Time Characteristic on the Non-linear Properties of Siegnette-electrics

introduction of field reversal, by using bipolar pulses considerably reduces the divergence between the curves. The curves of Figure 4 can be represented by Eq (1) and this enables the charge and discharge curves of a non-linear capacitor using VK2 as dielectric to be constructed as in Figure 8. It is further proposed that the product of energy-density and time is a valid measure of the way in which the domain structure changes. An integral expression s is deduced which is evaluated by Simpson's Rule. Figure 9a shows the various pulse shapes applied to the non-linear capacitor of Figure 8. Figure 9a compares the variation with series resistance (controlling the rate of rise of voltage) of the induction and of the arbitrary measure, s , for peak voltages of 3, 4 and 5 kV/cm.

There are 9 figures, 1 table and 8 references, 7 of which are Soviet and 1 English.

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68131
SOV/144-59-2-6/19

Influence of the Exciting Field vs Time Characteristic on the Non-linear Properties of Siegnette-electrics

ASSOCIATION: Kafedra avtomaticheskikh i izmeritel'nykh ustroystv, Novocherkasskiy politekhnicheskiy institut (Chair of Automation and Metering Equipment, Novocherkassk Polytechnical Institute)

SUBMITTED: January 12, 1959

4

Card 5/5

PEKKER, I.I.; DOMANOV, A.D.; SHMOYLOV, N.F.; KOMOV, A.N.

Automatic instrument for the sorting of permanent magnets according to their magnetic properties. Trudy inst. Kom.stant.mer i izm. prib no.64:123-129 '62. (MIRA 16:5)
(Magnets--Standards) (Magnetic measurements--Equipment and supplies)

L 47571-66 EWT(1) TG

ACC NR: AP6032166 SOURCE CODE: UR/0410/66/000/004/0092/0099

AUTHOR: Karpyuk, B. V. (Novosibirsk); Shmoylov, N. F. (Novosibirsk)

34
B

ORG: none

TITLE: Determining the optimal values of parameters for elements of measuring systems

SOURCE: Avtometriya, no. 4, 1966, 92-99

TOPIC TAGS: reliability theory, measuring device reliability, reliable device synthesis, voltage divider, MEASURING APPARATUS

ABSTRACT: The problem of the reliability of measuring devices is analyzed. It is assumed that a measuring device is characterized by certain otuput parameters Y_i and that their dependence on the parameters $x_1, x_2, \ldots, x_n$ of elements of the device is known, (that is the function $Y_i = f_i(x_1, x_2, \ldots, x_n)$ is known) and that the range within which the Y_i varies and certain conditions limiting the selection of $x_1, x_2, \ldots, x_n$ are given. On the basis of these assumptions, the concepts of domains of allowable and possible values of the parameters $x_1, x_2, \ldots, x_n$ are introduced. The reliability problem studied in the article is formulated as follows: knowing the domains of allowable and possible values of the parameters $x_1, x_2, \ldots, x_n$, it is necessary to determine their initial values $x_{10}, x_{20}, \ldots, x_{no}$ such that the probability of Y_i being within a certain range is maximal. To simplify the deductions, the simplest voltage divisor is analyzed with its division ratio

Card 1/2 UDC: 621.317.019.3

ACC NR: AP6032166

$$n = \frac{R}{r} \quad (1)$$

where r and R are the corresponding resistances taken as its basic characteristic (the output parameters). A closed domain of allowable parameters bounded by four intersecting lines and the rectangular domain of possible parameters are established in the space of parameters r and R. The method of determining optimal nominal values r_o and R_o depends essentially on the relation between those two domains. The following possible cases are distinguished: 1) the domain of possible values of parameters is considerably smaller than the domain of allowable values; 2) both domains are commensurable; 3) the domain of possible values of parameters is larger than the domain of allowable values. Methods for determining the nominal optimal parameters r_o, R_o, for all three cases are presented. It is pointed out that these methods can be applied for any number of parameters, however, the difficulties of calculation also increase with an increased number of parameters. Orig. art. has: 3 figures and 18 formulas. [LK]

SUB CODE: 14/ SUBM DATE: 10Jan66/ ORIG REF: 009/ ATD PRESS: 5092

Card 2/2

SHMOYLOV,V.

Rural youth is mastering building trades. Sel'stroi.10 no.6: 5-6 Je '55. (MLRA 8:10)

1. Sekretar' Voronezhskogo obkoma Vsesoyuznogo Leninskogo kommunisticheskogo soyuza molodezhi
(Building trades--Study and teaching)

SHMOYLOVA, O. S.

Wines produced in the Kazakh S.S.R. V. A. [illegible]rg and O. S. Shmoilova. *Vinodelie i Vinogradarstvo S.S.S.R.* 11, No. 11, 19-21(1951).—The ecological conditions of the varieties of grapes and the types of wines produced in the region are discussed. Depending mainly on the altitude of certain districts the grapes produced are most suitable for the manufg. of table wines (alc. 10.39–11.37 vol. %, titratable acidity (I) 6.51–8.33, tartaric acid (II) 1.95–3.00, glycerol (III) 4.25–6.98, extractive material (IV) 20.15–23.2, and enotannin (V) 0.16–0.335 g./l., resp.), dessert wines (alc. 13.92–15.69 vol. %, sugar 14.83–18.94%, I 3.02–7.9, II 1.08–1.71, III 3.69–4.82, IV 21.9–46.39, and V 0.217–1.82 g./l., resp.), and strong wines of Port and Madeira type (alc. 16.5–23 vol. %, sugar 3.5–10%, I 3.4–7.0, III 1.65–7.6, and IV 15.3–29.4 g./l., resp.). Other chem. characteristics tabulated are: pH 3.15–3.85, lactic acid 1.02–2.45 g./l.; phosphoric acid 0.112–0.440 g./l., and the coloring substances. In the dessert wines fructose constitutes 52–77% of the total sugar. During a storage period of 14 months the amt. of I in the wines decreased from 7.1–10.0 to 5.2–6.0 g./l.; the highest decrease was 40.0%. B. Wierbicki

Shmyglova, O. S.

USSR/Microbiology - Industrial Microbiology. T-9

Ref Jour : Ref Zhur - Biol., No 5, 1958, 19454

Author : Shmyglova, O.S.

Inst :

Title : Nitrogenous Substances in Grape Must and Wine.

Orig Pub : Dokl. AN UzSSR, 1956, No 9, 47-50

Abstract : As different varieties of grapes ripen (Saperavi, Rkatsiteli, Terbash, Tayfi, Bayan shirey, Khindogny, Hungarian Muscat) in Mid-Asian environments, the quantity of total nitrogen (at the expense of protein and amine nitrogen) is increased in berries. In the process of must fermentation of the same grape varieties, the quantity of nitrogenous substances is decreased which, evidently, is caused by intensive yeast development. Especially marked in the initial days of fermentation is the diminishing quantity of ammonia nitrogen. 1 month after separation of wine from yeasts, as well as after a year of storage, a small

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USSR/Microbiology - Industrial Microbiology. F-3

Abs Jour : Ref Zhur - Biol., No 5, 1958, 19454

Increase of ammonia nitrogen is noted, while the complex of the other nitrogenous substances remains almost unchanged. The one exception is Rkatsiteli wine, in which the quantity of nitrogenous substances is increased.

Card 2/2

S/133/61/000/007/002/017
A054/A129

AUTHORS: Shmrga, Lyubomir, Brodskiy, Ivo, Engineers

TITLE: The application of exothermic mixtures and inserts in heating ingots

PERIODICAL: Stal', no. 7, 1961, 598 - 604

TEXT: In the Vitkovitskiy Metallurgical Plants (Ostrava, Abstracter's note: Czechoslovakia) exothermic mixtures were applied in heating ingots, in view of the possibility of controlling their chemical reactions, utilizing their heating capacity and preventing their effect on the chemical composition of the metal. The calculations of the economic effect of various exothermic mixes gave the following results:

	Ferro-alloy mix	Thermic mix	Exothermic mix
Amount of head crop %	8.0	5.3	5.3
Spec. consumption of the mix, kg/t	0.9	10.0	3.0

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The application of exothermic mixtures and...

Cost of the mix Czech. crown/t	4.05	19.40	13.90
Saving in rolled product, crown/t	9.50	17.15	22.65

The most efficient use of exothermic substances is applying them in the form of inserts (whereby the head crop is reduced from 8 to 5%). In order to prevent the formation of shrinkage cavities, the metal of the ingot head must be kept liquid by heating until the ingot solidifies. In 650 kg ingots (with 250 mm sides) this takes 16 1/2 minutes, in 3,850 kg ingots (with 580 mm sides) about 88 1/2 minutes. The exothermic inserts known hitherto - which burn much too short a time - are not suitable for heating 3,850 kg ingots; their service life is also short. A new composition was developed for this purpose, containing 20% aluminum sleet, 50% oxidizing agents, (nitrates, bases and ferro-oxides), calcined chamotte and slag, to make the mix porous, to provide heat-insulating properties and to delay reactions. As binding agents synthetic resins are applied. By increasing the aluminum content of the mixtures, the metal solidifies more quickly in the ingot head. In order to increase the effect of the exothermic mix, the dozzle should be lined with

The application of exothermic mixtures and...

a heat-insulating material, for instance with foam-chamotte. The gap between the exothermic mix and the heat-insulating layer should be filled with a porous substance permitting the gases to penetrate which are produced during the burning of the insert. To ensure an efficient and rapid heating of the steel surface from above, the following methods were tested: the dozzles of three ingots were provided with exothermic packing (at the sides), while, moreover, two packs containing ferro-silicon + sodium nitrate, each weighing 4 kg, were added on the surface in one ingot. In the dozzle of the second ingot besides the afore-mentioned chemicals 4 kg exothermic bricks were laid on the surface, with the same composition as the packing, only the ore-content was lower and in the third dozzle only exothermic bricks (5 kg) of the same composition as the packing were added. In order to prevent the carbonization of the metal by the insulating mix, the ingot surface has to be coated by sand. In the first ingot the head decreased by 1.5%, in the second by about 3%. Due to the application of ferrosilicon-containing mixes, however, the metal was enriched by C and Si on the head surface, and during shrinkage these C- and Si-enriched parts sank down in the middle of the ingot. Better results were obtained in the second ingot with a smaller amount of C and Si in the central parts. The third ingot, to which only a 5-kg pack of briquettes was added on the dozzle surface, displayed deep shrinkage cavities. Based on the tests it can be establish-

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The application of exothermic mixtures and...

ed that it is useful to combine the heating of the ingot head from the sides with heating from the surface. In that case a head of 4% can be obtained and no chemical change takes place in the metal. An exothermic mix consisting of 50% aluminum sleet, 35% sodium nitrate, 10% manganese peroxide and 5% calcium silicate was found to be very efficient. Exothermic heating from the sides and from above is most effective for medium-sized ingots. The exothermic heating can also be carried out using the mix in the form of bricks. The bricks suggested by the authors can be used either as a frameless dozzle or for lining the dozzle. These bricks may contain either 1) exothermic and insulating substances, reacting without explosive effects or 2) efficient exothermic additives or 3) an insulating and an exothermic layer (bricks in 2 or more layers). For all three types of bricks resins are used as binding material. The bricks can be produced by the cold, hot or combined methods. In the cold method good results are obtained when phenol-sulfonic, phosphoric and sulfuric acids are added. The refractory mix (of calcined chamotte) containing 5% resin and 0.8% phenol-sulfonic acid had a strength of 280 kg/cm^2. When the hot method is applied the resin-containing mix solidifies already during the pressing. In the combined method, which is the most productive, the solidification of the resin-containing mix is accelerated by additional drying at 300°C. After a 10-minute

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The application of exothermic mixtures and...

drying period the mix, containing 3.5% binding agent has a strength of 500 kg/cm^2. The consumption of exothermic substances in bricks is lower than when it is rammed into the ingot head. The exothermic bricks moreover can be produced outside the plant, they can be stored for an indefinite time and are easy to transport. The use of exothermic heating also produces a large saving. Based on a consumption of 9.1 kg/t packing (rammed), 1.82 kg/t exothermic mix and 2.7 kg/t aluminum, the price of the most expensive steels can be cut by 320 [Czechoslovakian] crowns, counting 300 crowns for the manual production of insert collars from perforated sheet. There are 8 figures and 9 references: 5 Soviet-bloc, 4 non-Soviet-bloc.

Card 5/5

ACC NR: AP7002967 (A,N) SOURCE CODE: UR/0413/66/000/024/0045/0046

INVENTOR: Shmudak, L.G.; Lesyuis, A.A.; Karnaukh, A.M.; Zlobinskiy, M.Ya.; Belinko, Ya.T.; Gorban', I.S.; Gorshteyn, N.M.; Mikhaylenko, G.I.

ORG: none

TITLE: Lubricant for hot processing of metals. Class 23, No. 189500

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 24, 1966, 45-46

TOPIC TAGS: metal ~~and~~ processing, ~~metal hot processing~~ lubricant, lithium, ~~containing lubricant~~, alkyl sulfate ~~containing surfactant~~ compound,

ABSTRACT:

This Author Certificate introduces a lubricant for hot processing of metals, based on an aqueous suspension of graphite. To improve the quality of lubricant, lithium formate, lithium carbonate and secondary alkyl sulfates are added to the initial graphite suspension. [ND]

SUB CODE: 11, 13/ SUBM DATE: 30Dec64/ ATD PRESS: 5114

Card 1/1 UDC: 621.892.7 621.7.016.2

YASHELESSKIY, A.N.; CHMEL'SON, I.E.

Determining the temperature of the ceramic plates of gas radiation burners. Gaz. prom. 10 no.4:16-20 '65.

(MIRA 18:5)

GRUSKIN, L.I.; SHMUEL'SON, I.E.

Ignition and safety device for infrared-radiation gas burners. (MIRA 17:12)
Gaz. prom. 9 no.1:27-29 '64.

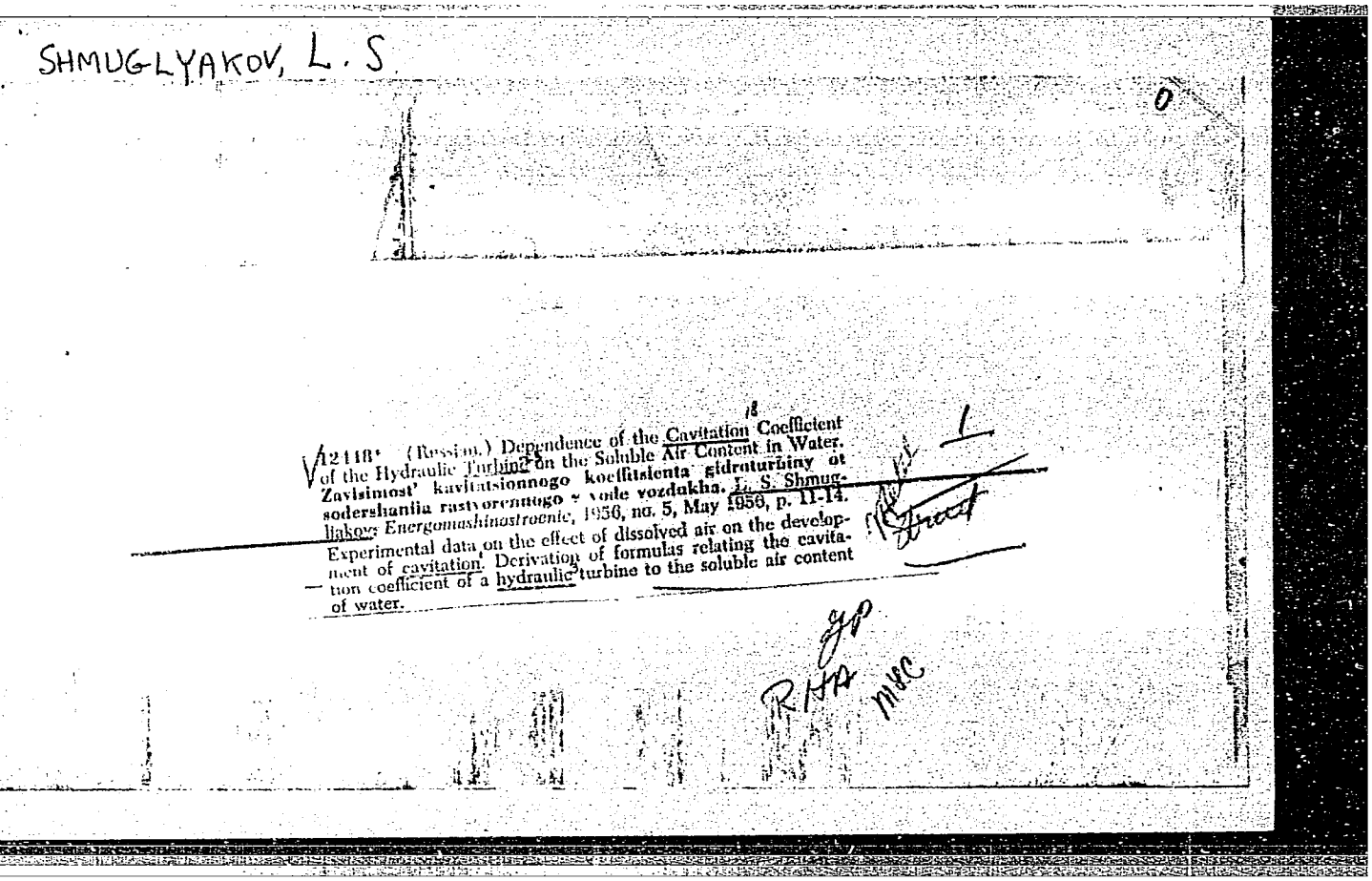
SHMUGLYAKOV, L.S., dots.

Investigation of hydraulic turbines under conditions of cavitation by ohmic and supersonic methods. Izv.vys.ucheb. zav.; energ. 2 no.8:105-112 Ag '59. (MIRA 13:2)

1. Khar'kovskiy politekhnicheskiy institut imeni V.I.Lenina. Predstavlena kafedroy gidravlicheskikh mashin.
(Hydraulic turbines)

SHMUGLYAKOV, L.S., dots., kand. tekhn. nauk.

Investigating the intensity of acoustic radiations in a flow of water during cavitation. Energomashinostroenie 4 no.9:23-27 S '58. (MIRA 11:11)
(Hydraulic turbines--Models) (Ultrasonic waves)



SHMUGLYAKOV, L. S.

V2118* (Russian.) Dependence of the Cavitation Coefficient of the Hydraulic Turbine on the Soluble Air Content in Water. Zavisimost' kavitatsionnogo koeffitsienta gidroturbiny ot soderzhaniia rastvorennogo v vode vozdukha. L. S. Shmuglyakov. *Energomashinostroenie*, 1956, no. 5, May 1956, p. 11-14.

Experimental data on the effect of dissolved air on the development of cavitation. Derivation of formulas relating the cavitation coefficient of a hydraulic turbine to the soluble air content of water.

SHMUGLYAKOV, L.S.

Investigation of the cavitation by electrical method. Sborn.trud. lab.preb.bystr.mash. 3:112-123 '53. (MLRA 9:9)
(Cavitation)

SHMUGLIAKOV, L. S.

Propeller turbines of simplest construction. Moskva, Gos. izd-vo mestnoi promysnl. RSFSR, 1944. 42 p. (Prosteishie dvigateli dlia raionnoi promyshlennosti) (50-40054)

TJ877.S5

SHMUGLIAKOV, L. S.

PHASE I Treasure Island Bibliographic Report

C0000055

BOOK

Call No.: TK4018.S48

Author: SHMUGLIAKOV, L. S., Asst. Prof., Cand. of Tech. Sciences

Full Title: AXIAL FLOW TURBINES FOR RURAL HYDROELECTRIC STATIONS

Transliterated Title: Osevye turbiny dlia sel'skokhoziastvennykh gidroelektrostantsii.

Publishing Data

Originating Agency: None.

Publishing House: State Scientific-Technical Publishing House of Machine Building Literature (Mashgiz). Kiev. Ukrainian Branch of the Mashgiz.

Date: 1952. No. pp.: 159. No. of copies: 6,500

Editorial Staff

Editor: Kudin, S. N., Associate Prof. Technical Editor: None.

Editor-in-Chief: Leuta, V. I., Engineer Appraiser: Didkovskii, M. M., Asst. Prof.

Text Data

Coverage: A work which includes latest developments in axial flow turbines of average and low power. Contents: Ch.1: Operation, working principles, and use of axial flow turbines. Ch.2: Computation of basic data for installation. Ch.3: Construction of axial flow turbines. Ch.4: Transmission from turbine to generator. Ch.5: Automatic control of axial flow turbines. Ch.6: Brief instructions on the repair and operation of hydroturbines. Appendix 1: Specifications of generators for rural hydrostations. Appendix 2: Tables for selecting vertical generators and components for V-Belt transmission.

Purpose: A work for mechanics and technicians of rural hydroelectric stations.

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Card 2/3

Call No.: TK4018.S48

Full Title: AXIAL FLOW TURBINES FOR RURAL HYDROELECTRIC STATIONS

Facilities and personalities: Members of the Ukrainian Academy of Sciences, who have made significant contributions to the modern theory of hydromachines, and are engaged in further development of the theory:

Proskur, G. F., Professor
Voznesenskii, I. N., Professor

Employees of Leningrad Metal Plant (im. Stalin) who have been awarded the Stalin Prize for designing, building, and putting into operation hydroturbines for some of the largest hydroelectric stations:

Kovalev, N. N., Chief Designer
Granovskii, S. A., Engineer
Anosov, F. V., Engineer
Gamza, Z. M., Engineer
Vugrin, S. K., Engineer
Garkavi, Iu. E., Engineer

Call No.: TK4018.S48 00000055

Full Title: AXIAL FLOW TURBINES FOR RURAL HYDROELECTRIC STATIONS

Facilities and personalities (continued):

Stalin prize laureates of the All-Union Institute of Machine Building (VIGM) and Central Machine Building Bureau (TsKBGM) who have worked on the standardization of hydroturbins (average and low power) construction:

Kviatkovskii, V. S., Professor
Shchapov, N. M., Professor
Orakhelashvili, M. M., Engineer

Other plants producing hydroturbines of average and low power:

Ural Machine Building Plant
Bobraiskii Plant of the Ministry of Machine Building and Instrument

Building of the Belorussian SSR:

Molotov Plant
Erevan Mechanical Plant
Riga Turbomechanical Plant

No. of Russian References: 25.
Available: Library of Congress.

Osevyye Turbiny Dlya Sel'skokhozyaystvennykh Gidroelektrostantsiy (Axial Turbines For Agricultural Hydroelectric Plants) Moskva, Mashgiz, 1954.
156 P. Illus., Diagrs., Tables.
"Literatura": P. (157)

S.: N/5
741.11
.S5

SHUGLYAKOV, L.S., ~~Docent~~ Doc Tech Sci -- (diss) "Study of cavitation in hydro-turbines ~~with the~~ by means of ohmic and ~~ultrasound~~ ultrasonic methods." Khar'kov, 1959, 32 pp; 7 sheets of graphs (Min of Higher Education UkSSR. Khar'kov Polytechnic Inst im V.I. Lenin) 150 copies (KL, 36-59, 114)

IVASIK, I.; SHMUGLYAKOV, L., inzh.

Fight for economy. Grazhd.av. 16 no.3:9-10 Mr '59. (MIRA 12:4)
(Aeronautics, Commercial)

S/143/61/000/002/006/006
A207/A126

AUTHORS: Shmuglyakov, L. S., Doctor of Technical Sciences, Barlit, V. V., Candidate of Technical Sciences

TITLE: Results of investigations in the field of hydro-turbine construction

PERIODICAL: Energetika, no. 2, 1961, 109 - 114

TEXT: The department of hydraulics at the KhPI im. V. I. Lenin has conducted a series of investigations and developed new types of hydro-turbines. The present article summarizes the results of this work. The following features are outlined: a) production of a circulating part of a radial-axial turbine for 100 m pressures. An attempt was made to increase its speed and capacity at an adequate efficiency coefficient, good cavitational properties and stability of the water flow, under various working conditions of the turbine. In this connection, investigations are being conducted at the department in cooperation with the Khar'kov Plant im. S. M. Kirov, on the development of the circulating part of the hydro-turbine, for use at the Krasnoyarsk GES (hydro-power station), ensuring a Q'_I = 1,060 ÷ ÷ 1,150 l/sec and n'_I = 70 ÷ 80 rpm, in the estimated point. The latter can also be used at the Ust'-Ilimskiy, Yeniseyskiy GES, etc. 2) Certain features of the

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Results of investigations in the field of...

form of the blades in the working wheels of the radial-axial hydro-turbines. The department of hydraulics has designed the following wheels: P0320 (RO) (I), R0320 (II), P0П1-30 (ROP), ROP2-25, ROP3-25, ROP4-25 and ROP5-25. The Baursfield method and conformed reflections on the surface of rotations were used, considering certain features and corrections, not contrary to the method and based on the results of experiments of the working hydroturbine process. The equal distribution of pressure on the frontal part of the peripheral profile of the blade is adopted, in order to ensure high cavitational qualities of the turbine, when designing the working wheel ROP3-25, and, from this fact, the curve $v_u r = f(S)$ is derived, which served as the basis for the profiling of the blade by the Baursfield method. The ROP7-25 is being designed at the present time, having an equal distribution of the pressure along the entire blade to the bushing, which should ensure optimum cavitational qualities of the working wheel. The following wheels were designed: RO-III-30, RO-P2-25 and RO-P3-25. The department also completed the reconstruction of a universal stand for conducting power and cavitational investigations of hydroturbine models, having a diameter of 320 to 250 mm, at pressures of 10 ÷ 16 m. Another model with a 250 mm diameter has been designed for determining the hydraulic e.c. of the model. 3) the results of experiments on a model of a working wheel R0320 (I) and brief analysis. 4) development of the coun-

Card 2/3

SHMUGLYAKOV, L.S., doktor tekhn.nauk

Using the ohmic method for cavitations in natural power hydraulic turbines. Energomashinostroenie 7 no.8:32-34 Ag '61. (MIRA 14:10)

(Cavitation) (Hydraulic turbines)

SHMUGLYAKOV, L.S., doktor tekhn.nauk, prof.; FEDOROV, A.V., kand.tekhn.nauk, dotsent

Investigating cavitation in hydraulic machines by means of the ohmic method. Izv.vys.ucheb.zav.; mashinostr. no.11:62-75 '61. (MIRA 14:12)

1. Khar'kovskiy politekhnicheskiy institut im. V.I.Lenina.
(Hydraulic machinery--Testing) (Cavitation)

SHMUGLYAKOV, L.S., doktor tekhn.nauk; BARLIT, V.V., kand.tekhn.nauk

Effect of the output of the rotor wheel on the indices of a Francis-type hydraulic turbine. Izv. vys. ucheb. zav.; energ. 5 no.3:88-95 Mr '62. (MIRA 15:4)

1. Khar'kovskiy politekhnicheskiy institut imeni V.I.Lenina. Predstavlena kafedroy gidravlicheskikh mashin.
(Hydraulic turbines)

SHMUGLYAKOV, L.S., doktor tekhn.nauk, prof.

Effect of the type of cavitation on the form of breakaway characteristics of a hydraulic turbine. Energomashinostroenie 9 no.1:25-27 Ja '63. (MIRA 16:3)
(Hydraulic turbines)

[illegible], I.A., doktor tekhn. nauk, prof.; [illegible], V.I., kand. tekhn. nauk, dotsent; [illegible], V.A., inzh.

Analysis of the velocity field in the flow area of a high-speed Francis turbine. Izv. vys. ucheb. zav.; mashinostr. no.6:113-120 '64. (MIRA 17:12)

1. Khar'kovskiy politekhnicheskiy institut.

SHNUGLYAKOV, L.S., doktor tekhn. nauk, prof.; LASENKO, V. Ye., inzh.

Profiling of the blades of Francis-type hydraulic turbine in order to achieve anticavitational characteristics. Izv. vys. ucheb. zav.; energ. 7 no.11:100-106 N '64 (MIRA 18:1)

1. Khar'kovskiy politekhnicheskiy institut imeni V.I. Lenina. Predstavlena kafedroy gidravlicheskikh mashin.

SHMUGLYAKOV, L.S., doktor tekhn. nauk, prof.; BARLIT, V.V.; kand. tekhn. nauk, dotsent; KOLYCHEV, V.A., inzh.

Development of impellers for high-speed Francis turbines for pressures of the 100 m. order. Izv. vys. ucheb. zav.; mashinostr. no.10:107-118 '64 (MIRA 18:1)

1. Khar'kovskiy politekhnicheskiy institut.

SHMUGLYAKOV, L.S., doktor tekhn. nauk, prof.; BARLIT, V.V., kand. tekhn. nauk, dotsent; BITTENEK, A.I., inzh.; POTETENKO, O.V., inzh.

Development of the runners of high-pressure Francis turbines. Izv. vys. ucheb. zav.; energ. 9 no.1:87-95 Ja '66. (MIRA 19:1)

1. Khar'kovskiy politekhnicheskiy institut imeni V.I. Lenina. Predstavlena kafedroy gidravlicheskikh mashin. Submitted April 24, 1965.

PETROV, A.D.; NEFEDOV, O.M.; LEVKOV, Ya.L.; SHMUK, T.Yu.

Alkylation of benzene with 2-cyclohexylcyclohexanol in the presence of $AlCl_3$. Neftekhimia 1 no.3:362-369 My-Je '61. (MIRA 16:11)

1. Institut organicheskoy khimii AN SSSR imeni Zelinskogo.

ZAKHAROVA, G.S.; SHMUK, V.A. [deceased]

Study of the chlorination of a mixture of boron oxide and a carbon-rich material. Trudy MKHTI no.28:125-130 '59. (MIRA 13:11)
(Boron oxide) (Carbon) (Chlorination)

SHMYK, Ye.I., YELOVICH, S.Yu. and ROGINSKIY, S.Z.

"Study of the Kinetics of thermal Decomposition of Solid Permanganates. Izv. Akad. Nauk., SSSR, 1950, 5, 469-474.

SO: Translation- 2524467, 30 Apr 1954.

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Topography of the pyrolytic decomposition of barium permanganate. S. Z. Roginskii, B. I. Shmuk, and M. Ya. Kushnerev (Acad. Sci. U.S.S.R., Moscow). *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1950, 573–6.—Crystals of $Ba(MnO_4)_2$, having undergone beginning thermal decompn., were carefully dissolved in a drop of H_2O under the microscope; this operation leaves an undissolved superficial solid film (product of the decompn.) which appears to be an exact replica of the surface of the original crystal. Under a magnification of × 500, the film is seen to be highly porous. Under the electron microscope (× 16,000), the film is amorphous, nearly transparent, but covered with isolated dark spots, mostly near the edges of the original crystal, rarer in the middle of the face, but not in any way preferentially located near corners. X-ray patterns confirm the amorphous structure. By gas adsorption, the sp. surface area S is of the order of 6 sq. m./g. Thus, the solid product consists of a multitude of amorphous or at most cryptocryst. grains sepd. by a system of pores and channels. At the end of the process, the whole crystal becomes a loose aggregate of grains. If the original crystal (~ 1 mm. in size) has disintegrated into N grains of total surface area NS, the mean diam. of a grain can be estd. to $\sim 10^{-4}$ cm., and their total no., from one original crystal, to about 10^{12}. The process of decompn. can be pictured as starting with the formation of a highly permeable amorphous film. This film grows from initial centers of decompn. at the surface and spreads into the bulk of the crystal. No single grain of the amorphous solid product grows to any appreciable size. Rather, the amt. of the product increases by way of multiplication of the no. of the tiny grains, and the boundary between the rind, consisting of a large no. of individual grains, penetrates increasingly deeper into the crystal. N. Thon

SHMUK, E. I.

USSR

Defoaming of salt solutions during coal beneficiation. E. I. Shmuk, A. Ya. Larin, and V. B. Shneerson (Inst. Fuel Minerals and Inst. Petroleum, Acad. Sci. U.S.S.R., Moscow). *Izvest. Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk* 1955, No. 1, 135–40.—The causes of foam stability and means of defoaming were investigated. A defoaming agent DS, consisted of salts of aromatic sulfoacids, obtained by the sulfonation of aromatic hydrocarbons in the kerosine-gas oil petroleum fraction, of a general formula $ArRSO_3Me$, where Ar and R are the aromatic and aliphatic radicals (the latter in the side chain). The salts investigated included the Na, Ca, Al, and NH_4 salts, and the Na and NH_4 salts were found to be the most effective. The optimum defoamer concn. for salt solns. was detd. by measuring the contact angle of the suspension medium with the coal.

W. M. Sternberg

62
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Shmuk, P. I.

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Depressing foam in beneficiation of coal. P. I. Shmuk, M. A. Gelman, and A. Ya. Larin. U.S.S.R. 103,011, June 25, 1956. Salts of aromatic sulfonic acids derived from petroleum distillates are used to prevent the formation of stable foam in the beneficiation of coal in salt solns.

M. Hoseh

Shmuk, E. I.

2297. PHYSICOCHEMICAL STUDY OF WETTING AND FOAM EXTINGUISHING IN CALCIUM CHLORIDE SOLUTIONS. Shmuk, E.I. (Izv. Akad. Nauk SSSR, Otdel Tekh. Nauk (Bull. Acad. Sci. U.S.S.R., Sect. Tech. Sci.), 1956, (5), 163-167; abstr. in Chem. Abstr., 1956, vol. 50, 13404). Coal wetting in calcium chloride solutions is improved at higher solution temperatures and by the addition of a number of surface active substances. The surfactants were found to destroy three-phase foam in coal suspensions, but leave the two-phase foam. Surfactants such as D.S. salts, sulphanol, humic acid, etc., form deposits with calcium chloride solutions. The filtrate from these deposits remains surface active and destroys foam in coal suspensions up to some definite sludge formation in solutions. Alkali sulphite cellulose destroys the three-phase foam at any sludge content in the solution. The article deals with an evaluation of the different additions, permitting the realization of a complete or a partial destruction of three-phase foams in salt solutions. An investigation of the foam destruction in calcium chloride solutions is valuable, because such solutions are used in some special gravity methods of coal beneficiation. C.A.

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SHMUK E. I.

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"Aluminum oxide extraction from the tailings of coal flotation. V. I. Korshunov and E. I. Shmuk. *Izvest. Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk* 1957, No. 2, 153–5.—The Al_2O_3 content in the coal flotation tailings reaches 30–35%. The high SiO_2 content in the tailings makes the alk. extn. of Al_2O_3 unpromising, and the extn. with HNO_3 was studied. The tailings were calcined at 750° to convert Al_2O_3 to an acid-sol. modification, and greatly reduce the Fe soly. The 20–30% HNO_3 extd. up to 70% of the Al_2O_3 present, 50% HNO_3 increased the proportion to 93.6%. A 50% HNO_3 is obtained with no addnl. concn. during the pyrite oxidation during coal beneficiation. A temp. of 100–10° reduced the reaction time to 3 hrs. Slightly less than a stoichiometric proportion of HNO_3 is recommended to lower the proportion of Fe dissolved with the Al_2O_3. The economics of the process are calcd. (in rubles), and the over-all cost of Al_2O_3 extd. from coal tailings is figured at 588 rubles/t. W. M. Sternberg

KT

SHMUK, YE. I.

24-8-18/34

AUTHOR: Shmuk, Ye. I. (Moscow).

TITLE: Investigation of the decomposition of pyrite in coal caused by diluted nitric acid. (Issledovaniya razlozheniya pirita v ugle pri vozdeystvii razbavlennoy azotnoy kistloty).

PERIODICAL: "Izvestiya Akademii Nauk,Otdeleniye Tekhnicheskikh Nauk" (Bulletin of the Ac.Sc., Technical Sciences Section), 1957, No.8, pp.126-128 (U.S.S.R.)

ABSTRACT: For controlling correctly the chemical-gravitational process of coal beneficiation developed by the Ac.Sc. USSR and the Ministry of the Coal Industry, experiments were made consisting of microscopic investigation of the intermediate and the final solid products of reaction between pyrite and diluted nitric acid. The pyrite was crushed to 0.42 to 0.315 mm particles and treated with a 12% solution of nitric acid at 130 C for 5, 10, 15 and 20 minutes; following that the solid reaction products were washed in distilled water, dried and photographed with a magnification of twenty times. The results have shown that elementary sulphur is one of the final solid reaction products. It was established analytically and microscopically that in determining pyrite sulphur, elementary sulphur is formed and the pyrite sulphur is not determined fully and this leads in numerous cases to

Card 1/2

24-8-18/34

Investigation of the decomposition of pyrite in coal caused by diluted nitric acid. (Cont.)

appreciable errors in determining the pyrite sulphur.
Acknowledgments are made to A. Z. Yurovskiy, Doctor of Technical Sciences.
There are 6 figures, 1 table and 12 references, 4 of which are Slavic.

SUBMITTED: April 5, 1957.

AVAILABLE: Library of Congress

Card 2/2

SOV/180-59-1-25/29

AUTHORS: Zarubina, Z.M., Lyalikova, N.N. and Shmuk, Ye.I. (Moscow)

TITLE: Investigation of the Microbiological Oxidation of the Pyrite of Coal (Issledovaniye mikrobiologicheskogo okisleniya pirita uglya)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1959,Nr 1,pp 117-119 (USSR)

ABSTRACT: This is a preliminary communication on work carried out jointly by the Laboratoriya Obogashcheniya IGI AN SSSR (Enrichment Laboratory of the IGI AS USSR) and the Institut Mikrobiologii AN SSSR (Institute of Microbiology of the AS USSR) on the oxidation of coal pyrites by microbiological methods. The work was started in 1957 as part of the general study by the former organization of methods of oxidizing coal pyrites for desulphurization. A culture of Thiobacillus ferro-oxidans was prepared and added to coal samples. In one of each pair of samples the bacteria were killed. Analysis for sulphur after 10, 20 and 30 days showed that in these no desulphurization occurred in contrast to the samples with live bacteria (table). The fineness of the coal and the age of the

Card 1/2

Investigation of the Microbiological Oxidation of the Pyrite of Coal

culture had some effect on the oxidation.
A.Z. Yurovskiy and S.I. Kuznetsov advised on the work.
There are 1 table and 7 English references.

SUBMITTED: July 12, 1958

Card 2/2

SHMUK, Ye.I. (Moskva)

Thermodynamics of coal pyrite oxidation processes. Izv. AN SSSR. Otd. tekh. nauk. Met. i topl. no.6:177-182 N-D '60. (MIRA 13:12)
(Coal--Carbonization)

BERGMAN, G.A. (Moskva); SHMUK, Ye.I. (Moskva)

Thermodynamics of germanium reactions taking place during the thermal processing of coal. Izv. AN SSSR. Otd. tekh. nauk. Met. i topl. no.1:60-66 Ja-F '62. (MIRA 15:2)
(Coal--Carbonization)
(Germanium)

MEDVEDEV, V.A. (Moskva); SHMUK, Ye.I. (Moskva)

Thermodynamic calculation of germanium distribution in coal combustion products. Izv. AN SSSR. Otd. tekh. nauk. Met. i topl. no.3:38-40 My-Je '62. (MIRA 15:6)
(Germanium--Thermal properties) (Coal--Analysis)

BERGMAN, G.A. (Moskva); SHMUK, Ye.I. (Moskva)

Thermodynamics of germanium sulfides and some of their reactions.
Izv. AN SSSR Met. i gor. delo no.3:91-99 My-Je '64 (MIRA 17:7)

MERENOV, Igor' Vladimirovich; SHMUKER, Anatoliy Lazarevich; YERMILOV, L.T., kapitan 2 ranga, red.; KALACHEV, S.G., tekhn. red.

[Inflatable lifesaving apparatus for use at sea] Naduvnye spasatel'nye sredstva na more. Moskva, Voenizdat, 1963. 101 p. (MIRA 16:7)

(Lifesaving apparatus)

80453

S/055/60/000/01/02/009

16.4200

AUTHOR: Shmukler, A.I.

TITLE: Singular Integrals and Convergence of Fourier Series

PERIODICAL: Vestnik Moskovskogo universiteta. Seriya I, matematika, mekhanika, 1960, No.1, pp.16-24

TEXT: Let $C_{[0,1]}$ (resp. $C_{[0,2\pi]}$) be the space of continuous periodic functions with the period 1 (resp. 2π); let $\Delta_m f(x,t) = \sum_{k=0}^{m} (-1)^k C_m^k f[x+(m-2k)t]$. Let $\omega(t)$ be a non-negative measurable function on $[0,1]$ and $\int_{\varepsilon}^{1} \frac{dt}{\omega(t)} < \infty$, $0 < \varepsilon \leq 1$. The following integrals are called sigular:

$$(1) \qquad \int_0^1 \frac{|\Delta_m f(x,t)|^p}{\omega(t)}\,dt = (L)\int_0^1 \frac{|\Delta_m f(x,t)|^p}{\omega(t)}\,dt,$$

where p is arbitrarily positive, and

$$(2) \int_0^1 \frac{(\Delta_m f(x,t))^p}{\omega(t)}\,dt = \lim_{\varepsilon \to 0} (L) \int_{\varepsilon}^{1} \frac{(\Delta_m f(x,t))^p}{\omega(t)}\,dt,$$

Card 1/3

where p is a natural number.
The author formulates some theorems on the divergence of the integrals (1) and (2), e.g.
Theorem 4: On (0,1) let $\omega(t) > 0$, non-decreasing and $\lim_{t \to 0} \frac{\omega(t)}{t} = 0$. Then the set of functions $f(x) \in C_{[0,1]}$ for which for an arbitrary odd m and an arbitrary odd p almost everywhere there holds

$$\overline{\lim_{\varepsilon \to 0}} \left| \int_{\varepsilon}^{1} \frac{(\Delta_m f(x,t))^p}{\omega(t)} \, dt \right| = \infty ,$$

is a set of second category in $C_{[0,1]}$.
The obtained theorems are used for the investigation of convergence of Fourier series, e.g.
Theorem 5: Let the sequence $\varphi(n)$ have the property that $\lim_{n \to \infty} \varphi(n) = \infty$. The set of the $f(x) \in C_{[0,2\pi]}$ for which $\sum_{n=1}^{\infty} (a_n^2 + b_n^2) \varphi(n) = \infty$ (where a_n, b_n are Fourier coefficients of $f(x)$), is a set of second category

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Singular Integrals and Convergence of Fourier Series

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in $C_{[0,2\pi]}$.

There are 9 theorems and 8 conclusions. The author mentions A.A. Konyushkov, I.I. Privalov and N.N.Luzin; he thanks P.L.Ul'yanov for the theme and aid. There are 15 references: 5 Soviet, 5 Polish, 1 Japanese, 2 English, 1 Italian and 1 American.

ASSOCIATION: Kafedra teorii funktsiy (Department of Theory of Functions)

SUBMITTED: May 5, 1959

Card 3/3

33859
S/039/62/056/002/003/003
B112/B108

16.4200

AUTHOR: Shmukler, A. I. (Moscow)

TITLE: Improper integrals and convergence of Fourier series

PERIODICAL: Matematicheskiy sbornik, v. 56 (98), no. 2, 1962, 237-280

TEXT: The author investigates continuous periodic (period 1) functions f(x), for which

$$\int_0^1 (|\Delta_m f(x,t)|^p/\omega(t))dt = +\infty. \qquad (1.2)$$

$\Delta_m f(x,t)$ is equal to

$$\sum_{k=0}^{m} (-1)^k C_m^k f(x+(m-2k)t),$$

and the non-negative function $\omega(t)$ satisfies the conditions

$$\int_\varepsilon^1 (1/\omega(t))dt < \infty, \ 0 < \varepsilon < 1, \ \int_0^1 (1/\omega(t))dt = \infty.$$

A number of conditions are derived under which the periodic functions f(x)

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Improper integrals and convergence...

satisfying condition (1.2) constitute a subset of the second category of the set of all periodic functions. P. L. Ul'yanov (Vestnik MGU, seriya matem., No. 5 (1959), 33-42) is referred to and thanked for assistance. A. A. Konyushkov (Izv. AN SSSR, seriya matem., 23 (1959), 135-156). N. N. Lizin (Integral i trigonometricheskiy ryad - Integral and trigonometric series, Moscow - Leningrad, Gostekhizdat, 1951), and I. I. Privalov (Granichnyye svoystva analiticheskikh funktsiy - Boundary properties of analytic functions, Moscow - Leningrad, Gostekhizdat, 1950) are also referred to. There are 5 figures and 20 references: 8 Soviet and 12 non-Soviet. The four references to English-language publications read as follows: S. Izumi, N. Matsuyama, T. Tsuchikura, Notes on Fourier analysis (XLIX): Some negative examples, Tôhoku Math. Journ., 2, No. 1 (1953), 43-51; S. Kaczmarz, The divergence of certain integrals, Journ. London Math. Soc., 7, No. 3 (1932), 218-222; E. C. Titchmarsh, The convergence of certain integrals, Proc. London Math. Soc., 24 (1925), 347-358; F. T. Wang, A note on Cesáro summability of Fourier series, Ann. of Math., 44 (1943), 397-400.

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SUBMITTED: June 16, 1960

Card 2/2

SHMUKLER, A. Kh. and MUCHNIK, V. M.

"Thawing of Hail During Falling".
Trudy Ukr. n.-i. gidro-meteorol. in-ta, No 1, pp 48-72, 1954.

Investigation of the equations of motion of hailstones and the equations determining the flows of heat and substance permitted treatment of the problem of the variations in the dimensions of hailstones during their movement in the atmosphere. In the solution of the problem it is assumed that the hailstone at all times remains spherical and that for hailstone radius greater than 0.3 cm one can disregard the thickness of the aqueous film covering the hailstones. From the factors determining the change in the size of hailstones during their movement the authors consider the flows of water and heat that arise under the influence of condensation, heat conduction, deposition of cloud elements upon the hailstones, friction, and radiation. Analysis of the equations of heat and mass balance of hailstones permits the con-clusion that during change in radius three cases are encountered: (a) thawing, (b) "wet growth" (water film on the surface of the ice), (c) "dry" or "maximum growth (temperature less than 0° and the water is not torn from the hailstones with height from R to R_n is obtained by a joint solution of the equations of motion and heat and mass equilibrium (R_n is the radius at a given height). (RZhGeol, No 7, 1955)

SO: Sum No 884, 9 Apr 1956

MUCHNIK, V.M., SHMUKLER, A.Kh.

Workman-Reynolds theory of thunderstorms. Izv.AN SSSR. Ser.geofiz. no.1: 112-113 Ja '56. (MLRA 9:3)

1. Ukrainskiy nauchno-issledovatel'skiy gidrometeorologicheskiy institut.

(Thunderstorms)

S/169/62/000/002/040/072
D228/D301

AUTHORS: Muchnik, V. M. and Shmukler, A. Kh.

TITLE: Icing processes at the peaks of thick cumulus clouds

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 2, 1962, 23-24, abstract 2B186 (Tr. Ukr. n.-i. gidrometeorol. in-ta, no. 26, 1961, 58-63)

TEXT: The freezing of drops, which starts from their surface, is, as a rule, accompanied by the bursting and flying out of large numbers of fragments. At temperatures below -12° the probability of the freezing of cloud droplets is rather great; the fragments which thereby fly out collide with other drops and cause them to freeze. The authors reckon that this phenomenon is the cause of the chain process leading to the freezing of the whole summit of a cloud. While freezing the drops eject ice fragments which disintegrate and collide with other drops; this induces their subsequent freezing with the ejection of new fragments, etc. The speed of removal of the debris from an original drop is determined by the

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Icing processes at ... S/169/62/000/002/040/072
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of λ) and of the natural speed of their fall. [Abstracter's note: Complete translation.]

Card 3/3

MUCHNIK, V.M.; SHMUKLER, A.Kh.

Freezing of the tops of cumulus cogestus clouds. Trudy UkrNIGMI no.26:58-63 '61. (MIRA 15:2)
(Cloud physics)

SHOSTAK, A.I.

Performing converging Fourier series. Sib. mat. zhur. 6 no.3:669-
(MIRA 18:8)
[illegible] Nov-Dec '65.

PECHKOVSKIY, V.S., inzh.; SHMUKLER, A.L., vrach.

New inflatable lifesaving rafts. Sudostroenie 28 no.5:39-41 My '62. (MIRA 15:7)

(Lifesaving apparatus)

BYCHKOV, A.A.; SHMUKLER, A.S.

Preparation of tomato juice without sterlization. Kons.i ov. prom. 15 no.2:6-7 F '60. (MIRA 13:5)

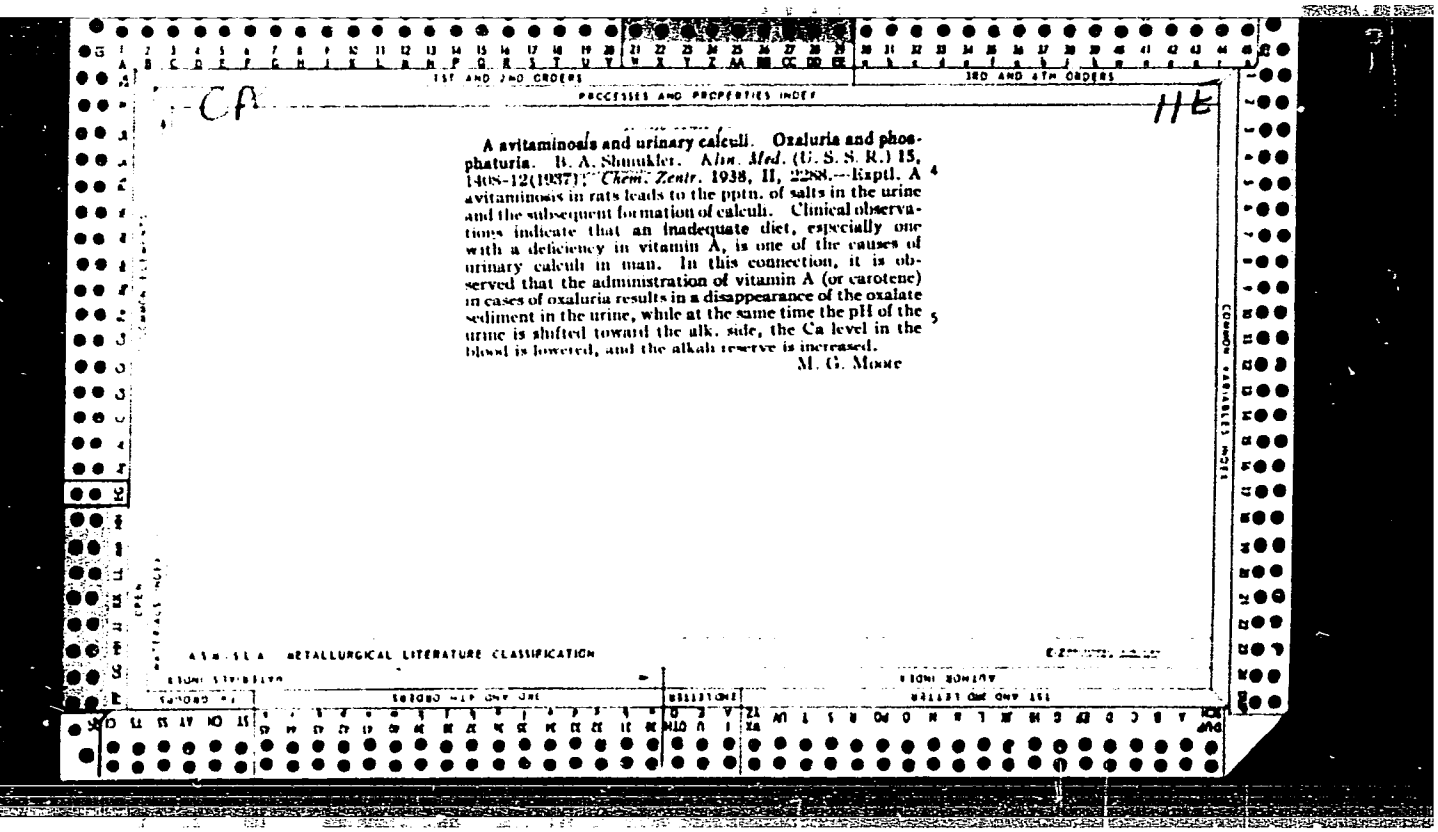
1. Odesskiy konservnyy kombinat.
(Tomato juice)

MAL'TSEV, M.L.; TAUBMAN, Ye.I.; SHMUKLER, A.S.

Operation conditions of the spray dryer in the processing of powdered vegetables. Kons.i ov.prom. 17 no.5:22-24 My '62. (MIRA 15:5)

1. Ukrainskiy nauchno-issledovatel'skiy institut konservnoy promyshlennosti.

(Vegetables---Drying)



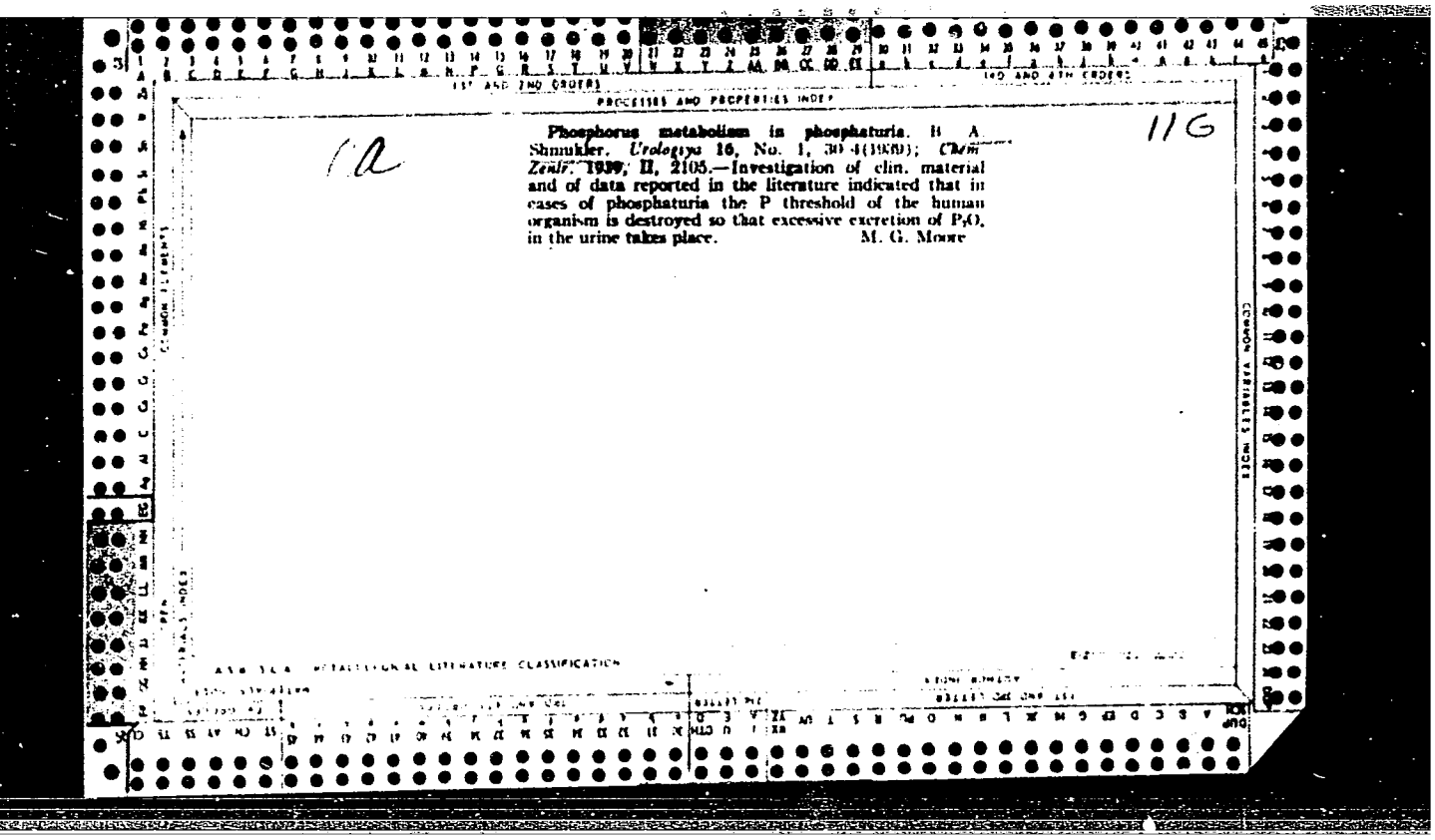
CA

11E

PROCESSES AND PROPERTIES INDEX

A avitaminosis and urinary calculi. Oxaluria and phosphaturia. B. A. Shmukler. *Klin. Med.* (U. S. S. R.) 15, 1408-12(1937); *Chem. Zentr.* 1938, II, 2288.—Exptl. A avitaminosis in rats leads to the pptn. of salts in the urine and the subsequent formation of calculi. Clinical observations indicate that an inadequate diet, especially one with a deficiency in vitamin A, is one of the causes of urinary calculi in man. In this connection, it is observed that the administration of vitamin A (or carotene) in cases of oxaluria results in a disappearance of the oxalate sediment in the urine, while at the same time the pH of the urine is shifted toward the alk. side, the Ca level in the blood is lowered, and the alkali reserve is increased.

M. G. Moore



PROCESSES AND PROPERTIES INDEX

1a

11G

Phosphorus metabolism in phosphaturia. B. A. Shmukler. *Urologiya* **16**, No. 1, 30-4(1950); *Chem. Zentr.* **1950**, II, 2105.—Investigation of clin. material and of data reported in the literature indicated that in cases of phosphaturia the P threshold of the human organism is destroyed so that excessive excretion of P_2O_5 in the urine takes place. M. G. Moore

A.S.T.M. METALLURGICAL LITERATURE CLASSIFICATION

SHTUKLER, B. A.

Shtukler, B. A. "Prosthetic-plastic operation after bullet wounds of organs of the urino-genital system," Trudy Leningr. obl. gospitalya dlya lecheniya invalidov Otechestv. voyny, Leningrad, 1948, p. 75-95

SO: U-3050, 16 June 53, (Letopsis 'Zhurnal 'nykh Statey, No. 5, 1949)

SHMUKLER, B. A.

Shmukler, B. A. "On the pathogenesis and clinic of anuria," Trudy Leningr. obl. gospitalya dlya dlya lecheniya invalidov Otechestv. voyny, Leningrad. 1948, p. 96-109

SO: U-3850, 16 June 53, (Letopcis 'Zhurnal 'nykh Statey, No. 5, 1949)

SHMUKLER, B.A.

KUPRIYANOV, P.A., general-leytenant meditsinskoy sluzhby, redaktor; KOLESNIKOV, I.S., polkovnik meditsinskoy sluzhby, professor, redaktor; SMIRNOV, A.V., zasluzhennyy deyatel' nauki, professor; GOMZYAKOV, G.A., doktor meditsinskikh nauk; SHMUKLER, B.A., professor; SHEVCHENKO, F.Ya., tekhnicheskiy redaktor; SHCHADENKO, A.S., tekhnicheskiy redaktor

[Atlas of gunshot wounds] Atlas ognestrel'nykh ranenii. Pod red. P.A.Kupriianova, I.S.Kolesnikova. Leningrad, Gos. izd-vo meditsinskoy lit-ry. Vol.4, Pt.2. [Gunshot wounds of the pelvis and the urogenital system] Ognestrel'nye raneniia taza i mochepolovoi sistemy. 1953. 323 p. [Microfilm] (MLRA 7:10)

1. Deystvitel'nyy chlen Akademii meditsinskikh nauk SSSR (for Kupriyanov) 2. Russia (1923- U.S.S.R.) Glavnoye voyenno-meditsinskoye upravleniye vooruzhennykh sil SSSR.
(Pelvis--Wounds and injuries)
(Genito-urinary system--Wounds and injuries)
(Gunshot wounds)

SHMUKLER, B.A., professor.

Ureteral tumors. Vest.khir. 73 no.5:42-46 S-O '53. (MLRA 6:11)
(Ureters--Tumors)

SHMUKLER, B.A., professor

Pathogenesis and clinical aspects of brucellosis of the urogenital system. Urologiia 22 no.2:28-31 Mr-Ap '57. (MLRA 10:7)

1. Iz Odesskoy gorodskoy klinicheskoy bol'nitsy (glavnyy vrach V.M. Levandovskiy)

(BRUCELLOSIS
genitalia, male, clin. aspects & pathogen.)
(GENITALIA, MALE, dis.
brucellosis, clin. aspects & pathogen)

SHMUKLER, B.A., prof. (Odessa, ul. Pushkinskaya, d.57, kv.16)

Tactics of the urological surgeon in bilateral calculi of the kidneys and ureters. Nov.khir.arkh. no.2:21-25 Mr-Ap '58 (MIRA 11:6)

1. Odesskaya gorodskaya klinicheskaya bol'nitsa.
(URINARY ORGANS--SURGERY)
(CALCULI, URINARY)

SHMUKLER, B.A., prof.

Anuria caused by ureterocele. Urologiia 23 no.5:63-65 S-O '58
(MIRA 11:11)

1. Iz urologicheskogo otdeleniya Odesskoy gorodskoy klinicheskoy bol'nitsy (glavnyy vrach V.M. Levandovskiy).

(ANURIA, etiology & pathogenesis
ureters, diseases , case reports (Rus))
(URETERS, diseases
ureterocele causing anuria, case report (Rus))

NAPALKOV, Pavel Nikolayevich; SMIRNOV, Aleksandr Vasil'yevich, zasl. deyatel' nauki prof.; SHRAYBER, Mark Grigor'yevich; Prinimali uchastiye: ASOSKOVA, S.M.; IL'INSKAYA, O.V.; REPIN, Yu.M.; SHAFER, I.I.; SHMUKLER, B.A.; EL'BERG, G.A.; RUSANOV, A.A., red.; LEBEDEVA, Z.V., tekhn.red.

[Surgical diseases]Khirurgicheskie bolezni. Pod red. A.V.Smirnova. Leningrad, Medgiz, 1961. 571 p. (MIRA 15:12)
(SURGERY, OPERATIVE)